



Connecticut Department of Energy and Environmental Protection



Connecticut Department of
**ENERGY &
ENVIRONMENTAL
PROTECTION**

National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines (RICE Rule)



40 CFR 63 Subpart ZZZZ
Area Source Existing Emergency Spark Ignition Engine
≤500 Horsepower



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To comply with this rule, you must meet the following standards:

Every 500 hours of operation or annually, whichever comes first, you must:

- Change oil and filter

- Can utilize oil analysis program to extend specified oil change requirement
- Oil analysis must be performed at the same frequency specified above.
- Analysis program must at a minimum analyze: Total Acid Number, viscosity, and percent water content.
- Condemning limits for these parameters are: Total Acid Number increases by >3.0 mg KOH/g from Total Acid Number of the oil when new; viscosity of the oil has changed by $>20\%$ from the viscosity of the oil when new; or percent water content (by volume) is >0.5 .
- If all condemning limits are not exceeded, you are not required to change the oil.
- If any limits are exceeded, change the oil within 2 days of receiving the results of the analysis; if the engine is not in operation when the results are received, change the oil within 2 days or before commencing operation, whichever is later.
- Keep records of parameters analyzed, the results, and the oil changes.
- Analysis program must be part of the engine maintenance plan.

- Inspect all hoses and belts and replace as necessary



To comply with this rule, you must meet the following standards:

Every 1,000 hours of operation or annually, whichever comes first, you must:

- Inspect spark plugs

At all times you must operate/maintain all equipment in a manner consistent with safety and good air pollution control practices for minimizing emissions.



To comply with this rule, you must meet the following standards:

- If you commit to run your engine ≤ 15 hours annually for emergency demand response and do not operate for local reliability, you don't have the reporting requirements below.
- Starting in 2015, if you operate, or commit to operate, > 15 hours annually as part of emergency demand response program or for local reliability:
 - You need to collect and submit an annual report including location, dates and times of operation.
 - First report must cover calendar year 2015 and is due March 31, 2016.
 - Submit electronically using the form in the Compliance and Emissions Data Reporting Interface that is accessed through EPA's Central Data Exchange at www.epa.gov/cdx.



Monitoring Requirements



Photo credit: EPA

- Operate and maintain the engine and after-treatment control device (if any) according to the manufacturer's instructions or develop your own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions.
- Install a non-resettable hour meter if one is not already installed.
- Minimize the engine's time spent at idle during startup and minimize startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes.



Continuous Compliance Requirements

- No limit on hours of operation for emergency service (i.e. hurricane or ice storm)
- 100 hours/year allowed for:
 - Maintenance and testing
 - Emergency Demand Response (for periods in which the Reliability Coordinator under the North American Electric Reliability Corporation Reliability Standard EOP-002-3, Capacity and Energy Emergencies, or other authorized entity as determined by the Reliability Coordinator, has declared an Energy Emergency Alert Level 2); and
 - Responding to situations when there is at least a 5% or more change in voltage.
 - Operating for up to 50 hours to head off potential voltage collapse, or line overloads that could result in local or regional power disruption
 - Prior to May 3, 2014, the 50 hours can be used for peak shaving or non-emergency demand response to generate income for a facility, or to otherwise supply power as part of a peak shaving (load management) program with the local distribution system operator and the power is provided only to the facility itself or to support the local distribution system.
- If an emergency engine operates for more than allowable hours for non-emergency purposes, it will need to meet all non-emergency engine requirements.
- Engines must also meet State requirements for emergency engines.



CT Emergency Engine Requirements

According to Sec. 22a-174-22(a)(3) of the RCSA, “emergency engine” means a stationary reciprocating engine or a turbine engine which:

- Provides mechanical/electrical power only during periods of
 - testing and scheduled maintenance or
 - during an emergency or
 - in accordance with a contract ensuring electricity for use within the state of CT during an OP-4, Step 6 event
- Does not include an engine for which the owner/operator is party to any other agreement to sell electrical power from such engine to an electricity supplier, or otherwise receives any reduction in the cost of electrical power for agreeing to produce power during periods of reduced voltage or reduced power availability.

Note: Engines operating under RCSA Sections 22a-174-3b and 3c must comply with additional requirements



Federal vs. CT Emergency Engine Requirements

Federal Only	Common to Both	State Only
<ul style="list-style-type: none"> •100 hr/yr limit: <ul style="list-style-type: none"> -Testing and maintenance checks -Readiness testing -Emergency demand response -Responding to a 5% or more change in voltage •50 hr/yr of the 100 hr/yr limit: <ul style="list-style-type: none"> -Non-emergencies with no financial arrangement -Local reliability criteria as described in the rule -Can be used for peak shaving at area sources until May 3, 2014 	<ul style="list-style-type: none"> •Emergency hrs of operation: no limit (unless subject to 22a-174-3b or 3c) 	<ul style="list-style-type: none"> •Only operate during emergencies, maintenance/scheduled testing, or during an OP-4, Step 6 event •Engine cannot be used as part of any other agreement or financial arrangement with another entity If operating under RCSA Sec. 22a-174-3b: <ul style="list-style-type: none"> •Emergency hrs of operation: 300 hr/yr limit •Any nongaseous fuel consumed by engine shall not exceed sulfur content of 0.0015%, dry basis If operating under RCSA Sec. 22a-174-3c: <ul style="list-style-type: none"> No restriction on hrs of use or fuel sulfur content, however total facility purchases of fuel are extremely limited



To demonstrate compliance with all rule requirements, keep records of:

- Maintenance conducted on the engine to demonstrate that you operated and maintained the engine and after-treatment control device (if any) according to your maintenance plan.
- Hours of operation using the non-resettable hour meter
- The number of hours used for emergency operation (including what classified the operation as emergency)
- The number of hours used for non-emergency operation (if applicable)
- Notification of the emergency situation and the time the engine was operated if the engine is used for demand response, periods where there is a deviation of voltage or frequency of 5% or greater below standard voltage or frequency, supplying power as part of a financial arrangement.
- Keep records for 5 years from the date of creation.



By when must I comply with the rule?

Your compliance date is:
October 19, 2013



Photo credit: EPA



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Visit the EPA RICE Compliance Page

www.epa.gov/ttn/atw/icengines/

- ▶ Fact sheets
- ▶ Regulations
- ▶ Example notifications
- ▶ Announcements
- ▶ Q & A documents
- ▶ Testing advice
- ▶ Recorded webinars
- ▶ ...and more!



The screenshot shows the EPA website's Technology Transfer Network (TTN) for Air Toxics Web Site. The header includes the EPA logo and navigation links: LEARN THE ISSUES, SCIENCE & TECHNOLOGY, LAWS & REGULATIONS, and ABOUT EPA. A search bar and an A-Z Index are also present. The main content area is titled 'Stationary Internal Combustion Engines' and includes a sidebar with links to TTN Home, ATW Home, Rules & Implementation, National-Scale Air Toxics Assessment, Risk Studies, Education & Outreach, About Air Toxics, Pollutants & Sources, State, Local, Tribal Resources, Publications, Contacts, and Technical Resources. The main content area features an 'Announcements' section with a link to 'Response to Petitions for Reconsideration' and a section titled 'What Are Stationary Internal Combustion Engines?' which includes a photograph of a stationary engine and a description of its use. Below this is a section titled 'Why Does EPA Regulate Stationary Engines?'.



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Take Aways

Engine Type:

- An existing emergency spark ignition engine at an area source with a site rating less than or equal to 500 horsepower

Standards:

- Change oil/filter (can use oil analysis program), inspect hoses and belts, and replace as necessary every 500 hours or annually
- Inspect spark plugs every 1,000 hours or annually

Monitoring:

- Operate/maintain engine according to manufacturer's instructions or develop your own maintenance plan
- Install non-resettable hour meter



Take Aways

Compliance Requirements:

- Emergency hours of operation: no limit (unless subject to 22a-174-3b or 3c)
- 100 hrs/yr for:
 - Maintenance and testing
 - Demand response for Energy Emergency Alert Level 2 situations; and
 - Responding to situations when there is at least a 5% or more change in voltage.
 - Operating for up to 50 hours to head off potential voltage collapse, or line overloads that could result in local or regional power disruption
- ≤15 hrs/yr for emergency demand response: no federal requirements
- Starting in 2015, >15 hrs/yr for emergency demand response: submit annual report
- If an emergency engine operates for more than allowable hours for non-emergency purposes, it will need to meet non-emergency engine requirements

Recordkeeping:

- Record:
 - Maintenance conducted
 - Total hours of operation
 - Hours of emergency operation (including what classified the operation as emergency)
 - Hours of non-emergency operation (if allowed)
 - Notification of emergencies and the time of operation during use for demand response, periods of deviation of voltage or frequency, supplying power as part of a financial arrangement.
- Retain records for 5 years

Compliance Date:

- October 19, 2013

